

Crop Planning Guide 2004

BROWN SOIL ZONE

The following crop budgets are intended to serve as a guide to estimate the income and cost for different crops on fallow and stubble land using conventional tillage and direct seeding practices. These estimates do not represent provincial average cost of production figures.

The figures provide an estimate of variable expenses and other expenses (depreciation and investment cost for machinery, buildings and land). The grain prices are farm gate price estimates for 2004 crop production based on the information that was available December 2003.

On each farm, costs and yields differ due to soil type, climatic conditions and agronomic practices. Farm managers should determine their own costs, yields and expected commodity prices and adjust or change the assumptions listed on the back of this publication. Blank worksheets are provided for this purpose.

Using the guide

When comparing returns per acre of a continuous-stubble crop to a fallow-seeded crop, you must add the summer fallow costs to the fallow-seeded crop expenses. The best way of comparing summer fallow and stubble crops is to calculate the average returns per rotation acre for different rotations of crops. Refer to the example in this guide.

The break-even yields per acre show the level of yields producers would need to achieve to cover costs based on the estimated market price. The break-even prices for crops show the levels of prices needed by producers to cover costs if the estimated average yields are obtained. Farm managers are advised to interpret these figures very carefully and evaluate new information as it becomes available.

Maximizing profitability

These crop budgets can be used to assist producers in deciding which crops will be the most profitable for the coming year or in deciding which crop rotations and farming practices may be the most profitable for the farm over the long term.

Short-term planning

Deciding which crops to grow this coming year can be made by comparing **return over variable expenses** (estimated gross revenue minus variable expenses). Deciding which crop to grow in any one year must also take into account a number of agronomic factors.

Long-term planning

When looking at long-term decisions such as crop rotations, direct seeding and continuous cropping, you must look at all costs, including fixed costs. The **return over total expenses** should be the basis of comparison between alternatives.

Switching to a longer crop rotation or direct seeding and/or continuous cropping will likely require a change in farm machinery. Before making these changes, the **return over all costs** needs to be considered.

Changes for 2004

Minor changes have been made to phosphorus fertilizer application. Rates have been reduced to fall in line with recommended maximum safe rates for seed placed phosphate. Producers should follow their soil test recommendations keeping in mind to not exceed these recommended safe rates.

Fall 2003 stubble subsoil moisture is very low in many areas therefore be cautious on your yield expectations. Subsoil moisture maps are available from Saskatchewan Agriculture, Food and Rural Revitalization (SAFRR) or on our website. SAFRR also produces maps that forecast potential insect infestation levels. Take all these factors into consideration when projecting yields.

Custom work costs have increased to more closely reflect the increase in popularity of contracting these services. Insecticide use is also increased in our assumptions. An insecticide application is included to help control grasshoppers in lentils and aphids in peas.

CROP PRODUCTION COSTS (\$/ACRE) BROWN SOIL ZONE 2004

104-02356/

	Summerfallow		Fallow Seeded Crops									Conventional Seeded Stubble Crops									Direct Seeded Stubble Crops								
	Tillage Fallow	Chem Fallow	Spring Wheat	Durum Wheat	CPS Wheat	Feed Barley	Oats	Flax	Lentil	Canary Seed	Mustard	Spring Wheat	Durum Wheat	CPS Wheat	Feed Barley	Oats	Flax	Lentil	Canary Seed	Mustard	Spring Wheat	Durum Wheat	CPS Wheat	Feed Barley	Oats	Flax	Lentil	Canary Seed	Mustard
REVENUE PER ACRE																													
Estimated Yield (bu./ac.,lb./ac.) (A)			33.5	36.4	42.8	53.3	60.0	19.4	1224.6	1053.0	18.8	24.8	26.6	30.6	37.6	43.3	14.2	1022.4	697.2	15.8	24.8	26.6	30.6	37.6	43.3	14.2	1022.4	697.2	15.8
Est. On Farm Market Price/bu.,lb. (B)			4.00	4.25	3.50	2.40	1.65	7.50	0.18	0.15	8.00	4.00	4.25	3.50	2.40	1.65	7.50	0.18	0.15	8.00	4.00	4.25	3.50	2.40	1.65	7.50	0.18	0.15	8.00
Estimated Gross Revenue/ac (AxB) = (C)	0.00	0.00	134.00	154.70	149.80	127.92	99.00	145.50	220.43	157.95	150.40	99.20	113.05	107.10	90.24	71.45	106.50	184.03	104.58	126.40	99.20	113.05	107.10	90.24	71.45	106.50	184.03	104.58	126.40
EXPENSES PER ACRE																													
Variable Expenses/acre																													
Seed			7.16	8.68	6.94	6.92	7.52	6.30	21.60	8.05	18.10	7.16	8.68	6.94	6.92	7.52	6.30	21.60	8.05	18.10	7.16	8.68	6.94	6.92	7.52	6.30	21.60	8.05	18.10
Fertilizer - Nitrogen			7.20	7.20	7.20	7.20	7.20	7.20	2.16	7.20	7.20	16.20	16.20	16.20	16.20	16.20	16.20	2.16	16.20	16.20	16.20	16.20	16.20	16.20	16.20	16.20	2.16	16.20	16.20
- Phosphorus			7.20	7.20	7.20	7.20	7.20	3.60	4.80	7.20	4.80	7.20	7.20	7.20	7.20	7.20	3.60	4.80	7.20	4.80	7.20	7.20	7.20	7.20	7.20	3.60	4.80	7.20	4.80
- Sulphur & Other			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.70
Chemical - Herbicides	2.77	12.75	11.05	11.05	11.05	11.08	7.33	21.42	38.41	12.37	17.09	11.05	11.05	11.05	11.08	7.33	21.42	38.41	12.37	17.09	14.55	14.55	14.55	14.57	10.82	24.92	39.80	15.86	16.89
- Insecticides/Fungicides	0.00	0.00	1.12	1.12	1.12	0.00	0.00	0.00	1.40	1.17	0.39	1.12	1.12	1.12	0.00	0.00	0.00	1.40	1.17	0.39	1.12	1.12	1.12	0.00	0.00	0.00	3.51	1.17	0.39
- Others	0.00	0.00	2.76	3.12	3.12	2.88	2.04	1.20	1.80	1.75	0.00	2.76	3.12	3.12	2.88	2.04	1.20	1.80	1.75	0.00	2.76	3.12	3.12	2.88	2.04	1.20	1.80	1.75	0.00
Machinery Operating - Fuel	4.50	0.90	7.65	7.65	7.65	7.65	7.65	8.55	8.55	7.65	8.10	9.00	9.00	9.00	9.00	9.00	9.90	9.90	9.00	9.45	6.30	6.30	6.30	6.30	6.30	7.20	7.20	6.30	6.75
- Repair	2.45	1.75	7.20	7.20	7.20	7.20	7.20	8.64	10.74	7.20	7.20	7.20	7.20	7.20	7.20	7.20	8.64	10.74	7.20	7.20	6.05	6.05	6.05	6.05	6.05	7.26	9.36	6.05	6.05
Custom Work & Hired Labour	0.00	0.00	5.00	5.00	5.00	4.00	4.00	4.00	4.25	4.00	3.50	5.00	5.00	5.00	4.00	4.00	4.00	4.25	4.00	3.50	5.00	5.00	5.00	4.00	4.00	4.00	4.25	4.00	3.50
Crop Insurance Premium	0.00	0.00	5.55	6.68	9.04	8.12	6.94	10.45	20.65	9.71	11.02	4.11	4.88	6.44	5.72	5.01	7.61	17.22	6.50	7.82	4.11	4.88	6.44	5.72	5.01	7.61	17.22	6.50	7.82
Utilities & Miscellaneous	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14
Interest on Variable Expenses	1.02	1.47	1.72	1.80	1.82	1.73	1.60	1.97	3.11	1.84	2.21	1.96	2.03	2.03	1.94	1.82	2.17	3.08	2.03	2.40	1.95	2.02	2.02	1.93	1.81	2.16	3.04	2.02	2.29
Total Variable Expenses (D)	13.88	20.01	66.76	69.85	70.49	67.11	61.81	76.47	120.62	71.28	85.45	75.91	78.63	78.44	75.27	70.45	84.18	118.48	78.60	92.79	75.55	78.27	78.08	74.91	70.09	83.59	117.88	78.24	88.63
Other Expenses/acre																													
Building Repair	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Property Taxes	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36
Insurance & Licences	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Machinery Depreciation	4.90	3.50	14.40	14.40	14.40	14.40	14.40	14.40	17.90	14.40	14.40	14.40	14.40	14.40	14.40	14.40	14.40	17.90	14.40	14.40	12.10	12.10	12.10	12.10	12.10	12.10	15.60	12.10	12.10
Building Depreciation	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Machinery Investment	2.60	1.86	7.63	7.63	7.63	7.63	7.63	7.63	9.49	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	9.49	7.63	7.63	6.41	6.41	6.41	6.41	6.41	6.41	8.27	6.41	6.41
Building Investment	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Land Investment	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95	13.95
Total Other Expenses (E)	29.80	27.66	44.34	44.34	44.34	44.34	44.34	44.34	49.69	44.34	44.34	44.34	44.34	44.34	44.34	44.34	44.34	49.69	44.34	44.34	40.82	40.82	40.82	40.82	40.82	40.82	46.17	40.82	40.82
Labour and Management (F)*																													
Total Expenses (D+E+F) = (G)	43.69	47.67	111.10	114.19	114.82	111.45	106.15	120.81	170.31	115.61	129.78	120.25	122.97	122.78	119.61	114.79	128.52	168.17	122.94	137.12	116.37	119.09	118.90	115.73	110.91	124.40	164.05	119.06	129.45
Summerfallow Expense (H)			43.69	43.69	43.69	43.69	43.69	43.69	43.69	43.69	43.69																		
Total Rotational Expense (G+H) = (I)			154.79	157.88	158.51	155.13	149.83	164.49	213.99	159.30	173.47	120.25	1																

* These budgets do not include an estimate for owner/operator labour and management. This value varies greatly and depends on both the farm manager's needs as well as the ability of the farm business to generate income. Farm managers need to determine their own actual labour and management cost and add it to total expenses.

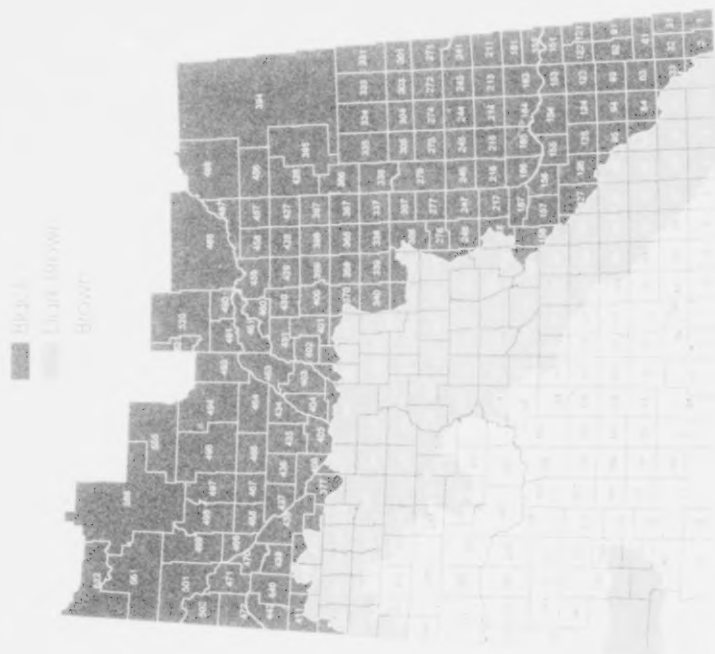
** Returns per acre, break-even yields and prices for fallow crops must include the previous year's fallow expenses. For simplicity we used 2004 tillage fallow values.

For more information, contact your Extension Agrologist or
the Provincial Farm Management Specialist
Crop Development Branch
Saskatchewan Agriculture, Food and Rural Revitalization
Phone (306) 787-6613
www.agr.gov.sk.ca
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BROWN SOIL ZONE ASSUMPTIONS

1. Seed including cleaning:
 - Wheat 100% of local, national and international production
 - Corn 100% of local and national production
 - Soybean 100% of local and national production
 - Canola 100% of local and national production
 - Pulse 100% of local and national production
 - Alfalfa 100% of local and national production
 - Clover 100% of local and national production
 - Hay 100% of local and national production
 - Other 100% of local and national production
2. Fertilizer:
 - Nitrogen 100% of local and national production
 - Phosphate 100% of local and national production
 - Potash 100% of local and national production
 - Other 100% of local and national production
3. Pesticides:
 - Insecticide 100% of local and national production
 - Fungicide 100% of local and national production
 - Herbicide 100% of local and national production
 - Other 100% of local and national production
4. Labour:
 - Farm 100% of local and national production
 - Other 100% of local and national production
5. Machinery:
 - Tractor 100% of local and national production
 - Combine 100% of local and national production
 - Other 100% of local and national production
6. Fuel:
 - Diesel 100% of local and national production
 - Gasoline 100% of local and national production
 - Other 100% of local and national production
7. Land:
 - 100% of local and national production
8. Crop prices:
 - Wheat 100% of local and national production
 - Corn 100% of local and national production
 - Soybean 100% of local and national production
 - Canola 100% of local and national production
 - Pulse 100% of local and national production
 - Alfalfa 100% of local and national production
 - Clover 100% of local and national production
 - Hay 100% of local and national production
 - Other 100% of local and national production
9. Crop yields:
 - Wheat 100% of local and national production
 - Corn 100% of local and national production
 - Soybean 100% of local and national production
 - Canola 100% of local and national production
 - Pulse 100% of local and national production
 - Alfalfa 100% of local and national production
 - Clover 100% of local and national production
 - Hay 100% of local and national production
 - Other 100% of local and national production
10. Machinery depreciation:
 - 100% of local and national production
11. Building depreciation:
 - 100% of local and national production
12. Investment goal:
 - 100% of local and national production
13. Land investment cost:
 - 100% of local and national production
14. Crop prices:
 - Wheat 100% of local and national production
 - Corn 100% of local and national production
 - Soybean 100% of local and national production
 - Canola 100% of local and national production
 - Pulse 100% of local and national production
 - Alfalfa 100% of local and national production
 - Clover 100% of local and national production
 - Hay 100% of local and national production
 - Other 100% of local and national production
15. Crop yields:
 - Wheat 100% of local and national production
 - Corn 100% of local and national production
 - Soybean 100% of local and national production
 - Canola 100% of local and national production
 - Pulse 100% of local and national production
 - Alfalfa 100% of local and national production
 - Clover 100% of local and national production
 - Hay 100% of local and national production
 - Other 100% of local and national production
16. Crop prices:
 - Wheat 100% of local and national production
 - Corn 100% of local and national production
 - Soybean 100% of local and national production
 - Canola 100% of local and national production
 - Pulse 100% of local and national production
 - Alfalfa 100% of local and national production
 - Clover 100% of local and national production
 - Hay 100% of local and national production
 - Other 100% of local and national production
17. Crop prices:
 - Wheat 100% of local and national production
 - Corn 100% of local and national production
 - Soybean 100% of local and national production
 - Canola 100% of local and national production
 - Pulse 100% of local and national production
 - Alfalfa 100% of local and national production
 - Clover 100% of local and national production
 - Hay 100% of local and national production
 - Other 100% of local and national production
18. Labour and management:
 - 100% of local and national production

Soil Zones of Southern Saskatchewan



For more information contact

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 Telephone: (306) 787-6633
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 This information is an Saskatchewan Agriculture, Food and Rural Enhancement Web site, along with most other publications that are produced by Saskatchewan Agriculture, Food and Rural Enhancement.
 Web site address: www.agr.gov.sk.ca

BROWN SOIL ZONE ASSUMPTIONS

1. Seed including cleaning:

- Spring wheat 1.15 bu./ac. at \$6.23/bu.
- Durum wheat 1.3 bu./ac. at \$6.68/bu.
- CPS wheat 1.3 bu./ac. at \$5.34/bu.
- Barley 1.5 bu./ac. at \$4.61/bu.
- Oats 2 bu./ac. at \$3.76/bu.
- Mustard 10 lb./ac. at \$1.81/lb., treated
- Flax 30 lb./ac. at \$11.73/bu (\$0.21/lb.)
- Lentils 90 lb./ac. at \$0.24/lb.
- Canary seed 35 lb./ac. at \$0.23/lb.
- Seed prices are an average of seed grower price and commercial prices since farmers commonly clean their own grain for seed (except for mustard).

2. Fertilizer:

- Nitrogen based on 46-0-0 at \$367/tonne (\$0.36 N/lb.)
- Nitrogen on fallow crops 20 lb. N/ac.
- Nitrogen on stubble crops 45 lb. N/ac.
- Nitrogen on fallow and stubble lentils 6 lb. N/ac. based on 50 lb. of 12-51-0.

Phosphorus based on 12-51-0 \$362/tonne (\$0.24 P/lb.)

- The following lists the recommended rates of seed placed phosphate: Cereals 30 lb./ac., Mustard 20 lb./ac., Flax 15 lb./ac., Lentil 20 lb./ac., Pea 15 lb./ac.

Source: SAFRR.

- Sulphur based on 20-0-0-24 at \$307/tonne (\$0.27 S/lb.)
- Sulphur on mustard at 10 lb. S/ac. (application cost is included with machinery costs)

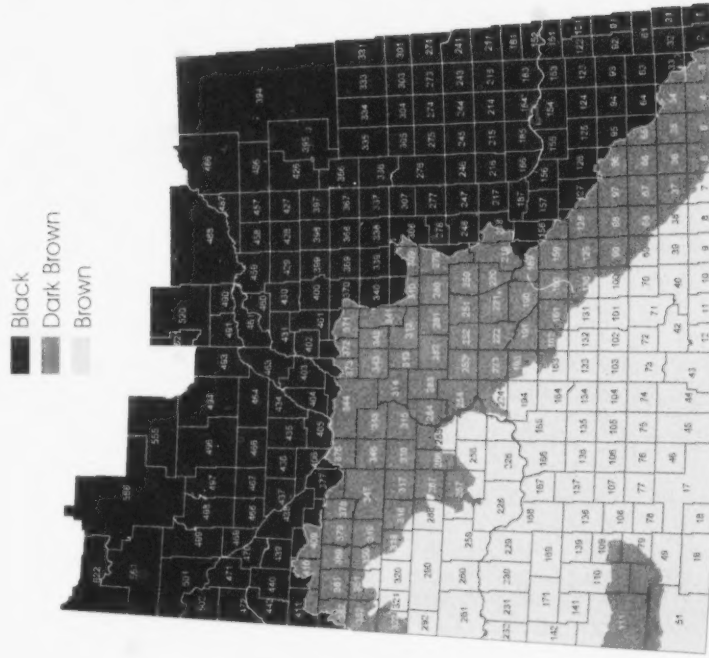
3. Pesticides:

- Herbicides:
 - Cereals, 25% of acres sprayed for wild oats (except oats) and 100% for broadleaf weeds
 - Mustard fallow and conventional stubble: wild oats and broadleaf pre-plant 100%. Mustard direct seed, 100% for wild oats.
- Lentils, flax: broadleaf and grassy weeds 100%.
- Canary seed: wild oats 25%, broadleaf 100%.
- Direct seeded stubble: pre plant burn-off 100% (glyphosate)
- Cereals, flax, canary seed: pre/post harvest 20% of all acres with glyphosate.

Others:

- All crops: seed treatment or inoculation 100%
- Canary: insect control 20%
- Mustard: insect control 10%, crop/year (10% of \$5/ac. aerial application cost included in custom work)
- Spring wheat, durum and CPS wheat: midge control 20% crop/year (20% of \$5/ac. aerial application cost included in custom work)
- Lentils: 100% inoculation, dessication, fungicide 20% crop/year, and insecticide 25% crop/year for grasshoppers
- Tillage fallow: winter annuals 100%
- Chem-fallow: 100% winter annuals, two broad spectrum burn-offs, one broad leaf.

Soil Zones of Southern Saskatchewan



For more information contact:

Your Extension Agrologist or
the Provincial Farm Management Specialist
Crop Development Branch
Saskatchewan Agriculture, Food and Rural Revitalization
Telephone (306) 787-6613
Revised December 2003
This information is on Saskatchewan Agriculture, Food and Rural Revitalization's
Web site along with most other publications that are produced by Saskatchewan
Agriculture, Food and Rural Revitalization.
Web site address: www.agr.gov.sk.ca

USING THE 2004 CROP BUDGETS

The relative profitability of crops can be difficult to determine when they are part of a longer-term rotation. Profits are easier to compare based on the net returns per rotation acre, which is the average profit or loss per acre, per year for a particular crop rotation.

Step 1. Adjust the crop budgets for the crops to be compared.

The crop budgets shown in this report are based on estimated costs and returns for each crop. The actual costs and returns on your own farm may be different. For example, the budget for direct seeded stubble canola assumes the use of a herbicide to control grassy weeds and volunteer grain. You may not have these weeds on the fields you are planning to seed. You may wish to change costs to suit the conditions on your own farm. The assumptions which were used to develop the budgets are listed on the back of this report. A blank worksheet is

provided to permit you to adjust the budgets for each crop in the rotations you are comparing.

Step 2. Calculate the average returns per rotation acre.

Use the table below to list the different rotations of crops and fallow which you are considering for your farm. Show the complete rotation from the first year to the last year. Use the adjusted crop budgets for your own farm to calculate the average return per rotation acre for various rotations.

CROP ROTATION RETURNS	Example 1 BLACK SOIL ZONE			Rotation 1		Rotation 2		Rotation 3	
	Crop	Return over Total Expenses \$/acre	Return over Variable Expenses \$/acre	Crop	Return \$/acre	Crop	Return \$/acre	Crop	Return \$/acre
Year 1	Canola on Fallow	\$(14.60)	\$86.71						
Year 2	Wheat Direct-Seeded	\$(0.08)	\$55.47						
Year 3	Lentil Direct-Seeded	\$1.73	\$62.63						
Year 4	CPS Direct-Seeded	\$18.39	\$73.94						
Year 5	Tillage Fallow								
Year 6									
Total Returns		\$5.44	\$278.75						
Total # of years in rotation		5	5						
Return per rotation acre		\$1.09	\$55.75						

In this example, both returns over total expenses and returns over variable expenses are calculated. If the average return is negative then the rotation with the smallest negative return would be best. In this example, the fallow expenses are included with the canola on fallow expenses.

CROP PRODUCTION COSTS MY FARM	USE THIS WORKSHEET TO ADJUST THE CROP BUDGETS TO YOUR FARM			
CROPS				
REVENUE PER ACRE				
Estimated yield (bushel/acre; lb/acre)				
X Estimated on-farm market price per bushel or per pound				
A Estimated Gross Revenue per acre				
EXPENSES PER ACRE				
Variable Expenses per acre				
Seed				
Fertilizer:				
Nitrogen				
Phosphorus				
Sulphur & Other				
Chemical:				
Herbicides/Fungicides				
Insecticides				
Seed Treatment				
Machinery Operating: Fuel				
Repair				
Custom Work & Hired Labour				
Crop Insurance Premium				
Utilities & Miscellaneous				
Interest on Variable Expenses				
B Total Variable Expenses per acre				
Other Expenses per acre				
Building Repair				
Property Taxes				
Insurance & Licences				
Machinery Depreciation				
Building Depreciation				
Machinery Investment				
Building Investment				
Land Investment				
Total Other Expenses				
+ Labour and Management ¹				
Total Expenses per acre				
+ Summerfallow cost				
C Total Rotational Expense				
RETURNS PER ACRE				
Return over Variable Expenses (A-B)				
Return over Total Rotational Expenses (A-C)				
BREAK-EVEN YIELD PER ACRE				
(per bushel or per pound) ²				
To Cover Variable Expenses				
To Cover Total Rotational Expenses				
BREAK-EVEN PRICE				
(per bushel or per pound) ²				
To Cover Variable Expenses				
To Cover Total Rotational Expenses				

¹ These budgets do not include an estimate for owner/operator labour and management. This value varies greatly and depends on both the farm manager's needs as well as the ability of the farm business to generate income. Farm managers need to determine their own actual labour and management cost and add it to total expenses.

² Returns per acre, break-even yields and prices for summerfallow crops include the previous year's fallow expenses.